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Todd, T.D.; Sivakumaran, S.;  
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*Communications Magazine, IEEE*  
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*Vehicular Communications, IRE Transactions on*  
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Chung-Sheng Li; Georgiou, C.J.; Ki Won Lee;  
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Global Telecommunications Conference, 2000, GLOBECOM '00, IEEE  
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### 1 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research****Publisher:** IBM PressFull text available: [pdf\(4.21 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

### 2 High-speed local area networks and their performance: a survey

Bandula W. Abeysundara, Ahmed E. Kamal

June 1991 **ACM Computing Surveys (CSUR)**, Volume 23 Issue 2**Publisher:** ACM PressFull text available: [pdf\(3.83 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

At high data transmission rates, the packet transmission time of a local area network (LAN) could become comparable to or less than the medium propagation delay. The performance of many LAN schemes degrades rapidly when the packet transmission time becomes small comparative to the medium propagation delay. This paper introduces LANs and discusses the performance degradation of LANs at high speeds. It surveys recently proposed LAN schemes designed to operate at high data rates, including the ...

**Keywords:** access schemes, computer networks, data communication, medium access protocols, optical fiber networks

### 3 Network Protocols

Andrew S. Tanenbaum

December 1981 **ACM Computing Surveys (CSUR)**, Volume 13 Issue 4**Publisher:** ACM Press

Full text available:  pdf(3.37 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**4 Programming languages for distributed computing systems** 

 Henri E. Bal, Jennifer G. Steiner, Andrew S. Tanenbaum  
September 1989 **ACM Computing Surveys (CSUR)**, Volume 21 Issue 3

Publisher: ACM Press

Full text available:  pdf(6.50 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

When distributed systems first appeared, they were programmed in traditional sequential languages, usually with the addition of a few library procedures for sending and receiving messages. As distributed applications became more commonplace and more sophisticated, this ad hoc approach became less satisfactory. Researchers all over the world began designing new programming languages specifically for implementing distributed applications. These languages and their history, their underlying pr ...

**5 A framework for event-based software integration** 

 Daniel J. Barrett, Lori A. Clarke, Peri L. Tarr, Alexander E. Wise  
October 1996 **ACM Transactions on Software Engineering and Methodology (TOSEM)**,  
Volume 5 Issue 4

Publisher: ACM Press

Full text available:  pdf(413.46 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Although event-based software integration is one of the most prevalent approaches to loose integration, no consistent model for describing it exists. As a result, there is no uniform way to discuss event-based integration, compare approaches and implementations, specify new event-based approaches, or match user requirements with the capabilities of event-based integration systems. We attempt to address these shortcomings by specifying a generic framework for event-based integration< ...

**Keywords:** CORBA, FIELD, Polylith, control integration, event-based systems, interoperability, reference model, software integration

**6 Local networks** 

 William Stallings  
March 1984 **ACM Computing Surveys (CSUR)**, Volume 16 Issue 1

Publisher: ACM Press

Full text available:  pdf(3.01 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The rapidly evolving field of local network technology has produced a steady stream of local network products in recent years. The IEEE 802 standards that are now taking shape, because of their complexity, do little to narrow the range of alternative technical approaches and at the same time encourage more vendors into the field. The purpose of this paper is to present a systematic, organized overview of the alternative architectures for and design approaches to local networks.

...

**7 A reliable and efficient multicast for broadband broadcast networks** 

 A. Erramilli, R. P. Singh  
August 1987 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM workshop on Frontiers in computer communications technology**

**SIGCOMM '87**, Volume 17 Issue 5

Publisher: ACM Press

Full text available:  pdf(690.88 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A reliable and efficient data transfer protocol is proposed for multicast applications in broadband broadcast networks. The protocol is based on negative acknowledgements, with several enhancements so that it matches most of the functionality of a positive acknowledgement based protocol. The protocol makes the best use of resources in the broadband network environment by conserving processing and trading off transmission and storage resources. The performance of this protocol is compared wi ...

8 Tree LANs with collision avoidance: protocol, switch architecture, and simulated performance 

T. Suda, S. Morris, T. Nguyen

August 1988 **ACM SIGCOMM Computer Communication Review , Symposium proceedings on Communications architectures and protocols SIGCOMM '88**, Volume 18 Issue 4

Publisher: ACM Press

Full text available:  pdf(1.19 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Packet collisions and their resolution create a performance bottleneck in random access LANs. A hardware solution to this problem is to use collision avoidance switches. These switches allow the implementation of random access protocols without the penalty of collisions among packets. We describe the designs of some tree LANs that use collision avoidance switches. The collision avoidance LANs we describe are broadcast star and CAMB tree (Collision Avoidance Multiple Broadcast tree). We next ...

9 On randomization in sequential and distributed algorithms 

Rajiv Gupta, Scott A. Smolka, Shaji Bhaskar

March 1994 **ACM Computing Surveys (CSUR)**, Volume 26 Issue 1

Publisher: ACM Press

Full text available:  pdf(8.01 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Probabilistic, or randomized, algorithms are fast becoming as commonplace as conventional deterministic algorithms. This survey presents five techniques that have been widely used in the design of randomized algorithms. These techniques are illustrated using 12 randomized algorithms—both sequential and distributed—that span a wide range of applications, including: primality testing (a classical problem in number theory), interactive probabilistic proof s ...

**Keywords:** Byzantine agreement, CSP, analysis of algorithms, computational complexity, dining philosophers problem, distributed algorithms, graph isomorphism, hashing, interactive probabilistic proof systems, leader election, message routing, nearest-neighbors problem, perfect hashing, primality testing, probabilistic techniques, randomized or probabilistic algorithms, randomized quicksort, sequential algorithms, transitive tournaments, universal hashing

10 Distributed match-making for processes in computer networks (preliminary version) 

Sape J. Mullender, Paul M. B. Vitányi

August 1985 **Proceedings of the fourth annual ACM symposium on Principles of distributed computing**

Publisher: ACM Press

Full text available:  pdf(961.22 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

11 Mobile networking in the Internet

Charles E. Perkins

December 1998 **Mobile Networks and Applications**, Volume 3 Issue 4

Publisher: Kluwer Academic Publishers

Full text available:  pdf(166.90 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Computers capable of attaching to the Internet from many places are likely to grow in popularity until they dominate the population of the Internet. Consequently, protocol research has shifted into high gear to develop appropriate network protocols for supporting mobility. This introductory article attempts to outline some of the many promising and interesting research directions. The papers in this special issue indicate the diversity of viewpoints within the research community, and it is ...

12 Distributed match-making for processes in computer networks

 Sape J Mullender, Paul M B Vitanyi

April 1986 **ACM SIGOPS Operating Systems Review**, Volume 20 Issue 2

Publisher: ACM Press

Full text available:  pdf(846.23 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In the very large multiprocessor systems and, on a grander scale, computer networks now emerging, processes are not tied to fixed processors but run on processors taken from a pool of processors. Processors are released when a process dies, migrates or when the process crashes. In distributed operating systems using the service concept, processes can be clients asking for a service, servers giving a service or both. Establishing communication between a process asking for a service and a process ...

13 The network architecture of the Connection Machine CM-5 (extended abstract)

 Charles E. Leiserson, Zahi S. Abuhamdeh, David C. Douglas, Carl R. Feynman, Mahesh N.

Ganmukhi, Jeffrey V. Hill, Daniel Hillis, Bradley C. Kuszmaul, Margaret A. St. Pierre, David S. Wells, Monica C. Wong, Shaw-Wen Yang, Robert Zak

June 1992 **Proceedings of the fourth annual ACM symposium on Parallel algorithms and architectures**

Publisher: ACM Press

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14 Efficient communication strategies for ad-hoc wireless networks (extended abstract)

 Micah Adler, Christian Scheideler

June 1998 **Proceedings of the tenth annual ACM symposium on Parallel algorithms and architectures**

Publisher: ACM Press

Full text available:  pdf(1.56 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

15 A real-time medium access control protocol for ad hoc wireless local area networks

 Rusty O. Baldwin, Nathaniel J. Davis, Scott F. Midkiff

April 1999 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 3 Issue 2

Publisher: ACM Press

Full text available:  pdf(1.15 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We develop and analyze a simple, elegant medium access control (MAC) protocol for use in transmitting real-time data in point to point *ad hoc* wireless local area networks

(WLANS). Our enhancement of IEEE 802.11, real-time MAC (RT-MAC), achieves dramatic reductions in mean delay, missed deadlines, and packet collisions by selectively discarding packets and sharing station state information. For example, in a 50 station network with a normalized offered load of 0.7, mean delay is reduced fr ...

**16 A framework for scalable dissemination-based systems**

 Michael Franklin, Stanley Zdonik

 October 1997 **ACM SIGPLAN Notices , Proceedings of the 12th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications OOPSLA '97**, Volume 32 Issue 10

Publisher: ACM Press

Full text available:  pdf(1.79 MB)

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The dramatic improvements in global interconnectivity due to intranets, extranets, and the Internet has led to an explosion in the number and variety of new data-intensive applications. Along with the proliferation of these new applications have come increased problems of scale. This is demonstrated by frequent delays and service disruptions when accessing networked data sources. Recently, push-based techniques have been proposed as a solution to scalability problems for distributed application ...

**17 Security problems in the TCP/IP protocol suite**

 S. M. Bellovin

 April 1989 **ACM SIGCOMM Computer Communication Review**, Volume 19 Issue 2

Publisher: ACM Press

Full text available:  pdf(2.72 MB)

Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

The TCP/IP protocol suite, which is very widely used today, was developed under the sponsorship of the Department of Defense. Despite that, there are a number of serious security flaws inherent in the protocols, regardless of the correctness of any implementations. We describe a variety of attacks based on these flaws, including sequence number spoofing, routing attacks, source address spoofing, and authentication attacks. We also present defenses against these attacks, and conclude with a discu ...

**18 Verification techniques for cache coherence protocols**

 Fong Pong, Michel Dubois

 March 1997 **ACM Computing Surveys (CSUR)**, Volume 29 Issue 1

Publisher: ACM Press

Full text available:  pdf(1.25 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this article we present a comprehensive survey of various approaches for the verification of cache coherence protocols based on state enumeration, (symbolic model checking, and symbolic state models. Since these techniques search the state space of the protocol exhaustively, the amount of memory required to manipulate that state information and the verification time grow very fast with the number of processors and the complexity of the protocol mechanism ...

**Keywords:** cache coherence, finite state machine, protocol verification, shared-memory multiprocessors, state representation and expansion

**19 Highly available systems for database applications**

 Won Kim

 March 1984 **ACM Computing Surveys (CSUR)**, Volume 16 Issue 1

Publisher: ACM Press

Full text available:  pdf(2.43 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#).

As users entrust more and more of their applications to computer systems, the need for systems that are continuously operational (24 hours per day) has become even greater. This paper presents a survey and analysis of representative architectures and techniques that have been developed for constructing highly available systems for database applications. It then proposes a design of a distributed software subsystem that can serve as a unified framework for constructing database applica ...

**20 Toward a parametric approach for modeling local area network performance** 

 Peter S. Mager

August 1982 **ACM SIGMETRICS Performance Evaluation Review , Selected papers of the 1982 ACM SIGMETRICS workshop on Software Metrics: part 1 SCORE '82**, Volume 11 Issue 2

Publisher: ACM Press

Full text available:  pdf(488.57 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The task of modeling the performance of a single computer (host) with associated peripheral devices is now well understood [Computer 80]. In fact, highly usable tools based on analytical modeling techniques are commercially available and in widespread use throughout the industry. [Buzen 78] [Buzen 81] [Won 81] These tools provide a mechanism for describing computerized environments and the workloads to be placed on them in a highly parameterized manner. This is important because it allows u ...

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